

HIGH SOLIDS THERMAL HYDROLYSIS PRE-TREATMENT TECHNOLOGY FOR ORGANIC WASTE



BIOMAK[®] FEATURES

Processing capacity	65,000 tonnes per year
Uptime	<90% (7884 h)
Process type	Semicontinuous, fully automated
Optimal feedstock	Particle size <14cm ; TS: 20-80%
Dimensions	35m x 14m x 20m
Operating conditions	2.5 - 4 barg ; 139 - 152°C
Residence time	20 minutes

OPEX



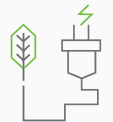
Water

0.40 m³/t



Thermal Demand

170 kWh /t



Electricity

4.75 kWhe/t



Liquid effluent

0.112 m³/t



Maintenance

120,000 €/year



Personnel

Max. 2 per shift
(shared with existing facility)

Equipment included

- ✓ Autoclave system
- ✓ Support structure
- ✓ Vacuum system
- ✓ Cooling tower
- ✓ Feeding & Outlet Hopper
- ✓ SCADA Software

INTEGRATION IN AD

Key Benefits

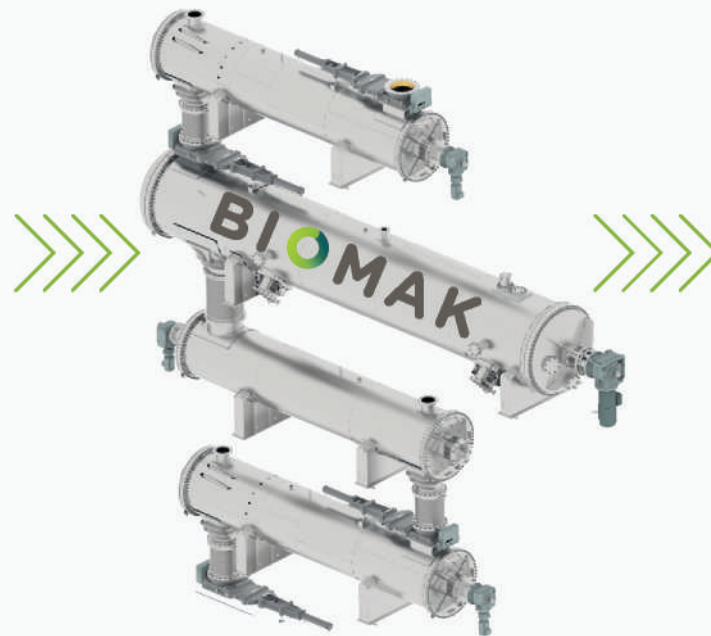
- 30% additional processing capacity
- 20 - 50% additional specific biogas production
- Increased organics separation efficiency and recovery >90%
- Increased biogas quality: +10% CH₄ concentration ; -50% H₂S concentration
- 10 - 15% less solid digestate
- Full process stability

Additional AD savings

- Less heat required in operation
- Potential avoidance of a pasteuriser
- No need of chemical reagents
- Less expenses on the H₂S cleaning and biogas upgrading
- Water savings from using the BIOMAK liquid effluent in low solids AD
- High stability avoiding operational stops and reducing digester maintenance
- Capability to process new MSW streams

65,000 tonnes/year	10% P/C
35% TS	8% Light residuals
77% Organics	5% Heavy residuals

Feedstock example



▼ 70,562 tonnes/year
▼ 32% TS

Raw Biomass



HOMOGENEOUS



CHEMICALLY DEGRADED



FREE OF PATHOGENS